UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,540	06/11/2005	Shahram Mihan	LU 6084 (US)	4071

34872 7590 07/23/2008

Basell USA Inc.
Delaware Corporate Center II
2 Righter Parkway, Suite #300
Wilmington, DE 19803

EXAMINER	
LEE, RIP A	

ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
07/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,540	MIHAN ET AL.	
	Examiner	Art Unit	
	RIP A. LEE	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *April 21, 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-19,27 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-19,27 and 28* is/are rejected.

7)☒ Claim(s) *16, 19, 27 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04-21-2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This office action follows a response filed on April 21, 2008. Claims 16-19, 27, and 28 are pending.

Claim Objections

1. Claim 16 is objected to because of the following informalities: In line 12 of the claim, please replace "ethylene and the α-olefins" with "ethylene with α-olefins." Appropriate correction is required.

2. Claims 16, 27, and 28 are objected to because of the following informalities: Please define lcb in the claims, i.e., "a long chain branching (lcb) rate of..." Appropriate corrections are required.

3. Claim 19 is objected to because of the following informalities: In line 3 of the claim, please replace "comprise" with "comprises." Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 16-19, 27, and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 16, 27, and 28 recite the term "molar mass distribution M_w/M_n" which renders the claims unclear because the term M_w/M_n represents molecular weight distribution.

Claims 16, 17, 27, and 28 recite "molar mass M_n" which renders the claims unclear because the term "M_n" represents number average molecular weight.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 16-19, 27, and 28 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 17-20 of copending Application No. 11/578,753. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to essentially the same copolymer of ethylene with α-olefins exhibiting substantially the same or substantially overlapping properties of M_w/M_n, density, M_n, vinyl group content, and bimodal short chain branching distribution.

In copending claims, copolymer of ethylene with α-olefins exhibits M_w of 5000 to 700,000, and M_w/M_n lies in the range of 6-100. Where M_w is 6, M_n is calculated to be in the range of 833-116,666, which is substantially overlapping with the claimed range of 10,000 to 4,000,000.

Claims of the patent do not recite properties CDBI, long chain branching rate, and side chain branching of maxima of peaks of the short chain branching distribution. Since products of identical chemical composition can not have mutually exclusive properties, one of ordinary skill in the art would have expected the polymer of the copending application to exhibit the claimed properties. Page 7 of the specification of the copending application discloses that polymers of the invention are, indeed, characterized by the claimed long chain branching (λ = 0.1-1.5) and CDBI (less than 50 %). Applicant's attention is drawn to MPEP § 804 where it is disclosed that "the specification can always be used as a dictionary to learn the meaning of a term in a patent claim." *In re Boylan*, 392 F. 2d 1017, 157 USPQ 370 (CCPA 1986). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. Claims 16-19, 27, and 28 are directed to an invention not patentably distinct from claims 17-20 of commonly assigned 11/578,753 for the reasons set forth in previous paragraph 7.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 11/578,753, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned *at the time the invention in this application was made*, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly

assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

Response to Arguments

9. The rejections of claims based on primary reference Wang (WO 01/92346/U.S. 6,723,675), set forth in paragraphs 3-6 in the previous office action dated October 18, 2007, have been withdrawn. The rejection of claims over Mihan *et al.* (WO 01/12641/U.S. 6,437,161) from paragraph 7 of the previous office action has been withdrawn. The rejection of claims over Kale *et al.* (U.S. 6,420,507) has been withdrawn.

The present invention is drawn to a copolymer of ethylene and α-olefin exhibiting the following properties: (1) M_w/M_n of 1-8, (2) density of 0.85-0.94, (3) M_n of 10,000-4,000,000, (4) CDBI less than 50 %, (5) long chain branching rate of 0.001-0.09 lcb/1000 C atoms, (6) bimodal short chain branching distribution, (7) side chain branching of the maxima of individual peaks of the short chain branching distribution is greater than 5 CH_3/1000 C atoms.

The closest reference to date is Kale *et al.*, which teaches a series of ethylene/octene copolymer exhibiting a density of about 0.870 g/cm^3, M_n on order of about 44,000-57,000, and M_w/M_n in the range of about 2.2-2.8 (see entries 1a-c and 2a-d in tables 2 and 5). Polymers of example 1b and 2a exhibit bimodal short chain branching distribution (col. 54, line 36; table 6). Kale *et al.* discloses generally that polymers of the invention will preferably have at least 0.03, and more preferably at least 0.04 vinyl groups/1000 C atoms (col. 40, lines 40-42). Polymers of the invention will preferably characterized as having preferably from 0.01 to 3.0 long chain branches/1000 C atoms (col. 40, line 45). While Kale *et al.* indicates preference for polymers possessing vinyl groups and long chain branching, there is no disclosure that polymers of examples1a-c and 2a-d necessarily and inherently possess these characteristics. Note that, out of the group of 1a-c and 2a-d that only polymer 1b and 2a exhibited a bimodal short chain branching distribution. Moreover, the reference does not teach or fairly suggest to one of ordinary skill in the art that inventive copolymers exhibit a CBDI of less than 50 % and a side chain branching of the maxima of peaks of the short chain branching distribution of greater than

5 CH_3/1000 C atoms. Taken as a whole, Kale *et al.* does not teach or suggest to one of ordinary skill in the art the polymer of the instant claims that exhibits properties (1) through (7).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu S. Jagannathan, can be reached at (571)272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

/Rip A. Lee/
Art Unit 1796

July 20, 2008